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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,834	02/19/2002	Wolfgang Scheibe	842FR/50684	2328

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CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER

BOECKMANN, JASON J

ART UNIT	PAPER NUMBER
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3752

MAIL DATE	DELIVERY MODE
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10/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/049,834

Applicant(s)

SCHEIBE ET AL.

Examiner

Jason J. Boeckmann

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3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/18/2009 has been entered.

Priority/Oath

Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Germany on 8/17/1999. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the valve rod (16) having a length greater by an excess length than the distance between the passage

opening sealing surface and the opposing stop surface, and the opposing stop surface, as claimed in claims 1, 16 and 21, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Reference number 5, of line 15 of page 9 does not appear in the figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to

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the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Letters d, r and s of figure 3, and reference number 120 of figure 2, do not appear in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-37 are rejected, as best understood, under 35 U.S.C. 103(a) as being unpatentable over Baumgartner et al. (6,161,813), In view of Narahara (JP 05223034A).

Baumgartner et al. shows a valve comprising: an opening (the path below element 25) having a sealing surface of the opening (where element 25 touches the valve seat); a stop, or opposing stop surface (the upper surface of element 54), displaced a distance from the opening; and an electromagnetic control valve including: a valve actuator (139, 127, 25) having an opening position (up) and a closing position (down), the valve actuator including: an actuator sealing surface (25) that engages the sealing surface of the opening when the valve actuator is at the closing position, an actuator stop surface (the bottom surface of element 139) larger than the sealing surface that engages the stop, or opposing stop surface, when the valve actuator is at the closing position, and a valve rod (127) disposed between the actuator sealing surface and the actuator stop surface. It appears from figure 3 that the valve rod (127) has a length that is greater by an excess length than a distance between the passages opening sealing surface and the opposing stop surface of the control valve.

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Baumgartner et al. however fails to specifically disclose that when the valve actuator is at the closing position, the excess length of the valve rod and the cooperation of the one end of the valve rod with the sealing surface and the opposite end of the valve rod with the stop surface provides a sealing function at the sealing surface by the one end of the valve rod while the opposite end of the valve rod provides for stopping of the valve rod and an associated damping function when the excess length is taken up by an elastic deformation of the valve rod.

However, Narahara shows an injection valve that includes an actuator valve rod 5 located in a nozzle body 7, wherein the actuator valve rod including an actuator stop surface (502), and an actuator sealing surface (501); the valve body including a sealing surface of the passage opening (701) and an opposing stop surface (704), the distance between the actuator stop surface (502) and the opposing stop surface (704) is set longer than the distance between the actuator sealing surface (501) and the sealing surface of the opening (701) when the actuator valve rod is lifted. In other words, the distance between the actuator stop surface (502) and the actuator sealing surface (501) is longer by an excess length than the distance between the opposing stop surface (704) and the sealing surface of the passage opening (701) (see figures 1 and 2). The valve operates in the following manner: When fluid is stopped, the actuator sealing surface (501) is brought into contact with the sealing surface of the passage opening (701) and the actuator stop surface (502) is brought into contact with the opposing stop surface (704) respectively by the elastic deformation of the actuator valve rod (5) (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to make the valve rod (127) of Baumgartner et al.'s valve, elastically deformable and slightly longer than the required length, just as the valve rod of the valve of Narahara is, so that when the valve is closed, the excess length of the valve rod is taken up by elastic deformation of the valve rod. This modification would allow for the shock of the valve closing to be absorbed at two positions rather than just one, as taught by Narahara (abstract).

Regarding claims 2 and 22, the stop surface of the actuator is significantly larger than the sealing surface (see Fig. 3).

Regarding claims 3, 4, 23 and 24 the valve actuator is a one-part valve rod and it contains a valve body which touches the front face of the valve rod and contains the sealing surface of the actuator (25).

Regarding claims 5 and 25, the valve body is constructed as a sphere, which interacts with the opening for the passage of fluid, forming a seal (See Fig. 3).

Regarding claims 6 and 26, the sealing surface of the actuator (25) is the front face of the valve rod.

Regarding claims 7, 9, the valve actuator (139) is mushroom-shaped, the stem of the mushroom forming the valve rod and the stop surface of the actuator being an annular collar, concentrically surrounding the valve rod in the region of the mushroom cap (24) (see Fig. 3).

Regarding claim 8, the valve actuator is divided by a dividing joint into an actuator stop (near 24), having the stop surface of the actuator, and a valve rod, in operative connection with the sealing surface and the stop of the actuator.

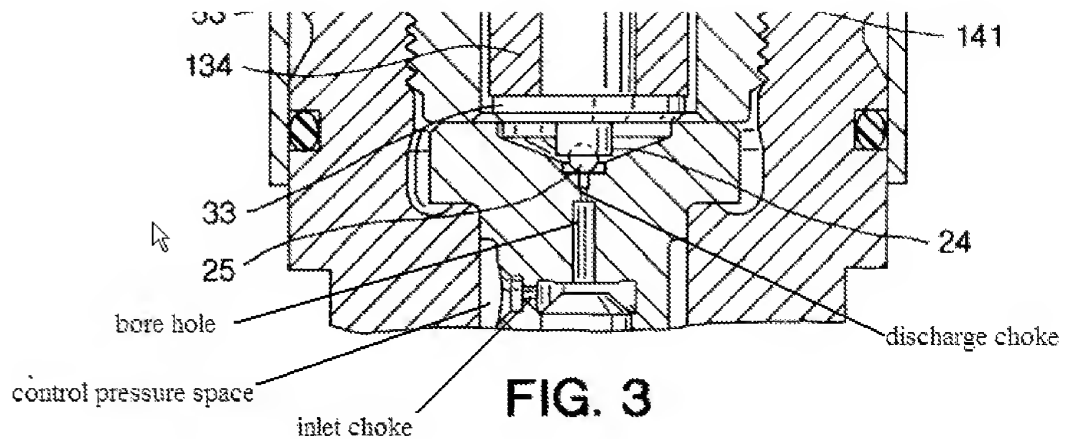
Regarding claims 10, 11, 27 and 28, the valve rod is guided axially movably in at least one guide bushing (134) and is disposed at a small distance from the sealing surface of the actuator (see Fig. 3).

Regarding claims 13 and 30 the sealing surface is formed in the end face of a disk-shaped insert part (the valve seat) (see Fig. 3) and adjoins the control pressure space on the side averted from the sealing surface.

Regarding claims 12 and 29, it is noted that the valve of Baumgartner et al. as modified by Kilgore et al. does not specifically disclose that the length of the valve rod is an integer multiple of its diameter.

However, it would have been obvious to one with ordinary skill in the art at the time the invention was made to make the length of the valve rod is an integer multiple of its diameter since our reviewing courts have held that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984).

Regarding claims 14-19, and 31-37 the insert part (also forms a stop for the valve needle) is formed in two parts with a first part, which contains an opening for the passage fluid and a discharge or outlet choke (see examiners marked up figure 3) and a second part at the control pressure space side, with a bore hole (see examiners marked up figure 3) which connects the control pressure space (see examiners marked up figure 3) with an opening for the passage of fluid. The second part contains an inlet choke (see examiners marked up figure 3) near the bore hole (see examiners marked up figure 3). The pressure space is connected with an inlet choke and the rear end of the valve needle (see examiners marked up figure 3) averted from the nozzle needle seat surface lies in the control pressure space. The pressure insert part also including an inlet choke and an outlet or discharge choke (see figure below).



Examiner's Marked Up Figure #3

Response to Arguments

Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cerny (5,288,025 and 5,271,565) shows a valve with similar features to that of the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason J. Boeckmann whose telephone number is (571)272-2708. The examiner can normally be reached on 8:00- 5:00, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason J Boeckmann/
Examiner, Art Unit 3752
9/29/2009